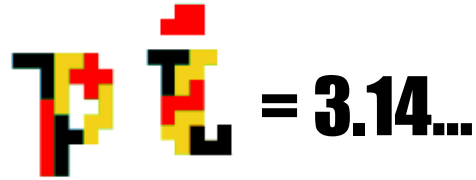
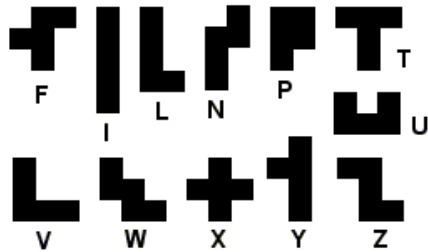


**University of Maryland**  
**Math Department celebrates  $\pi$**

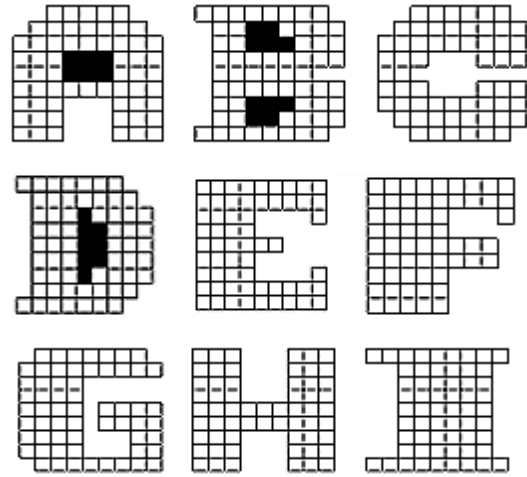


**Pentominoes**

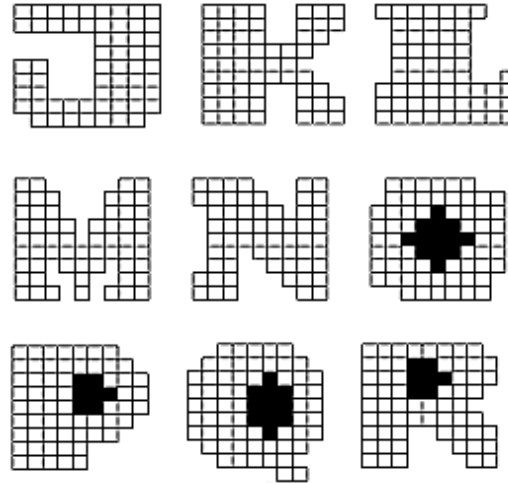


**The Belles Lettres Alphabet.**

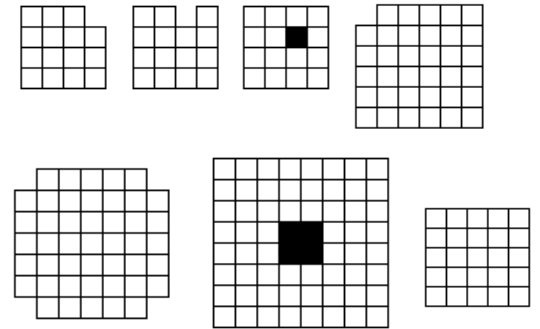
Each uses all 12 pentominoes.



The B, E and J have just one solution.



**Squares.** Figure out how many pieces it will take for each of these. Any square not divisible by 5 will have holes. Explore how many symmetrical ways you can place the 4 holes in the 7x7 and 8x8. Many solutions exist for all of these. The 8x8 with center hole has 65.



*pi pentominoes* are a Kadon gamepuzzle for 1 or 2 players, ages 6 to adult.

*Specially made for*

**University of Maryland  
 Math Department**

[www.math.umd.edu](http://www.math.umd.edu)

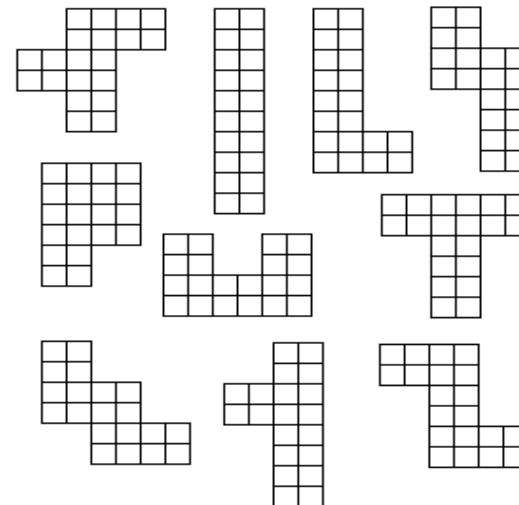
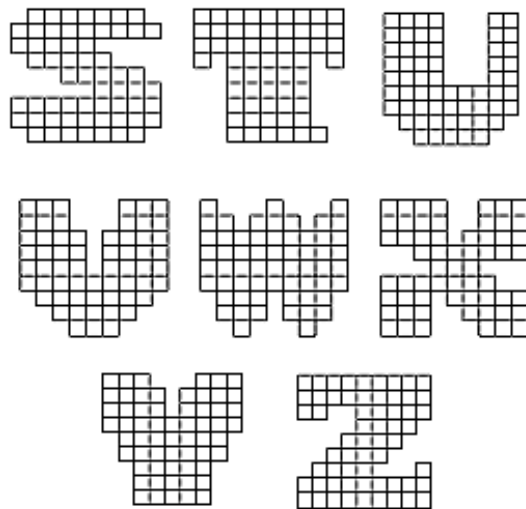
*Other pentomino-based sets from Kadon: Quintillions® | Poly-5™ | Quintachex® | Rhombiminoes™ and many more. See [www.gamepuzzles.com/polycube.htm](http://www.gamepuzzles.com/polycube.htm)*

*Need replacement parts? Email us at*

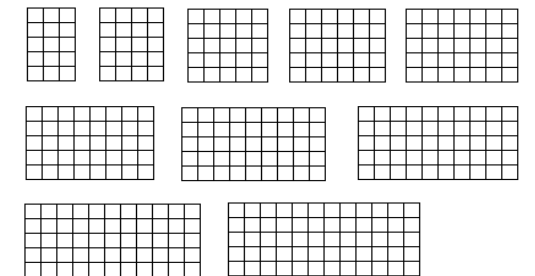
[kadon@gamepuzzles.com](mailto:kadon@gamepuzzles.com)

See over 200 of our other original combinatorial and polyform sets--recreational mathematics "for the joy of thinking®": [www.gamepuzzles.com](http://www.gamepuzzles.com)

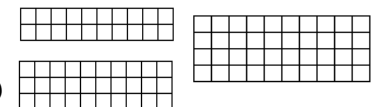
**Duplications.** Build each of these doubled pentomino shapes with just 4 pentominoes.



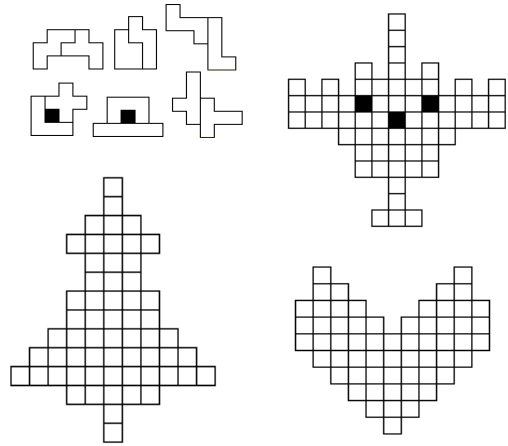
**Rectangles.** The 12 "pentominoes" are great at fitting together. Start by forming them into rectangles of various sizes, divisible by 5. How many solutions can you find for each? Build two at a time?



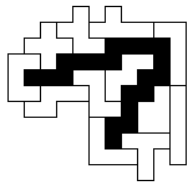
*Others:* 4x15, 6x10, 3x20 (see back page)



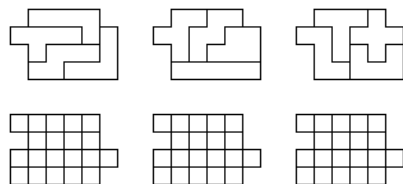
**Symmetrical Shapes.** Solve these and create your own. The Christmas tree is made with 6 symmetrical pairs of pentominoes. How many symmetrical pairs can you find (52 total), like these?



**Narrow Passage.** What's the longest single-width passage you can completely enclose with all 12 pentominoes? This sample has 20. You can do much better.



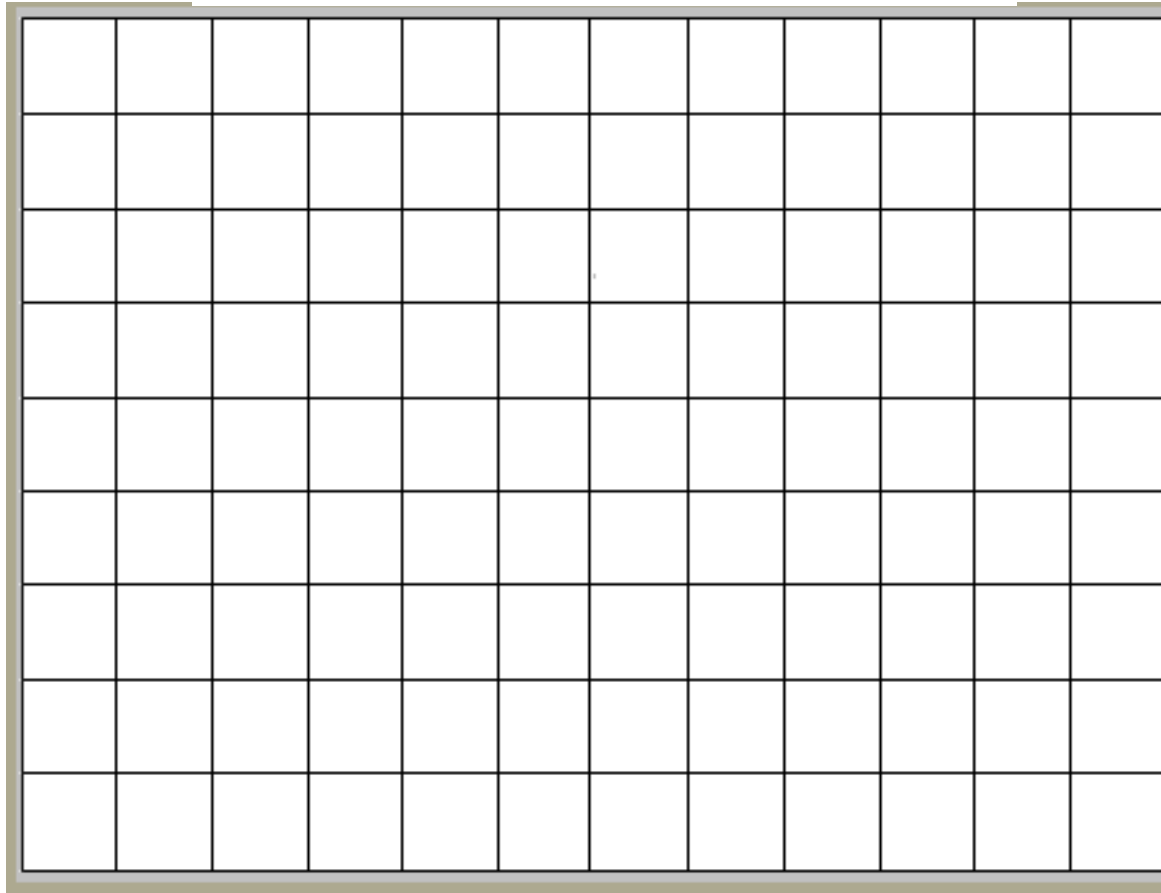
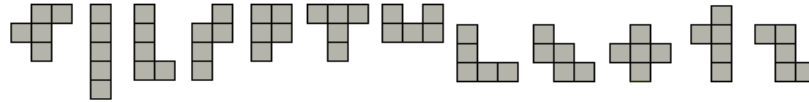
**The "20" Problem.** Build 3 congruent shapes of 4 pentominoes each, like this. Then find other triples.



# SQUINT®

*A strategy game for two players.*

Take turns choosing any unplayed pentomino and putting it on the grid. First move covers a corner square. After that, link pieces by their corners only; sides may not touch. Once placed, they are not moved again. Last move wins.



Squint® is a registered trademark of Kadon Enterprises, Inc., for one of its 5 Quintillions® games, since 1980.

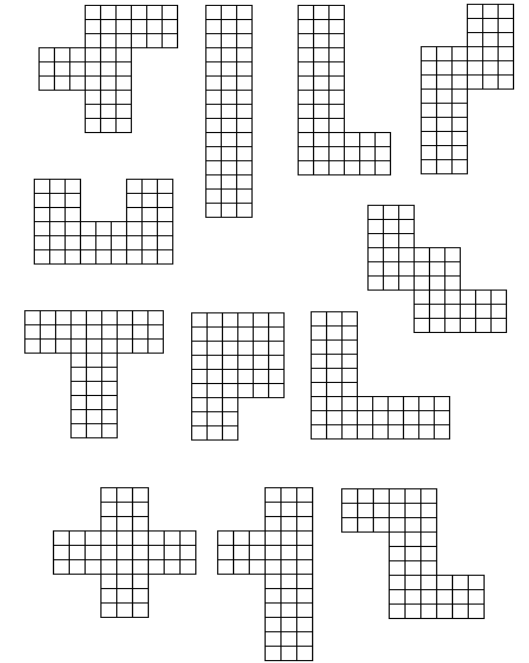
**Squint® Solitaire:** Get all 12 on the 9x12 grid, touching each other only by their corners.

**Exclusion Solitaire:** Place five pentominoes on the grid to block the rest (corners may touch).

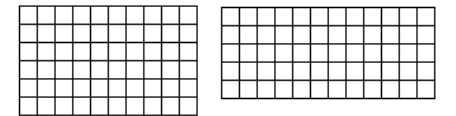
**Perimeter Solitaire:** Use all 12 pieces to fill all 38 border spaces.

You can do lots more with pentominoes than this one sheet can show.

**Triplings.** Build a tripled model of each pentomino, using any 9 of them. For extra challenge, omit the one being modeled.



**The full-size rectangles:**



*Solution count:*

6x10: 2339

5x12: 1010

4x15: 368

3x20: 2

